

FIG. 1



FIG. 2

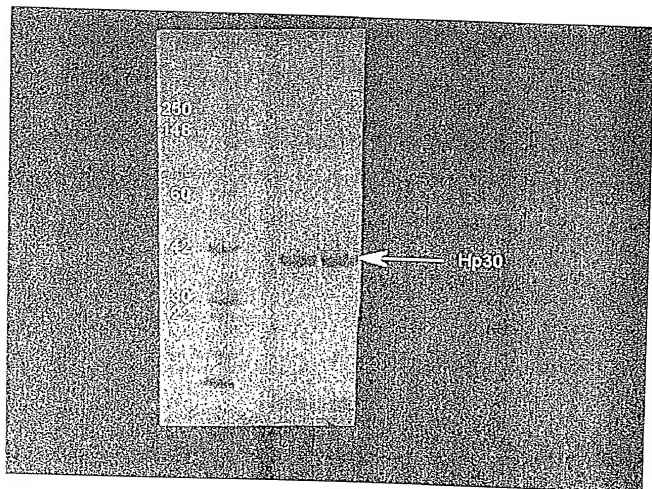


FIG. 3

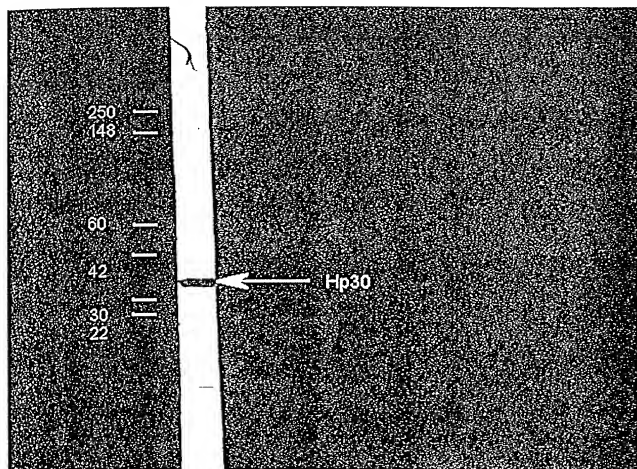


FIG. 4

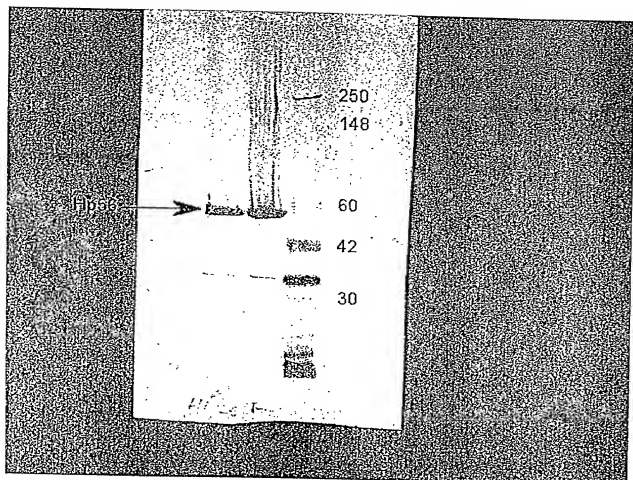


FIG. 5

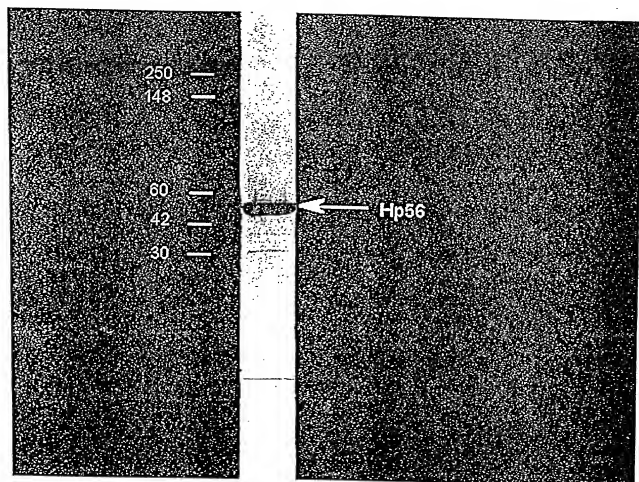


FIG. 6

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atg gaa ttg aat caa cca cca ctc cct aca gaa att gat ggt gac gct 48 Met Glu Leu Asn Gln Pro Pro Leu Pro Thr 10 Glu Ile Asp Gly Asp Ala 15	
tat cat aag ccg agt ttt aat gat ttg gcc tta aaa gaa tcg gtt tta 96 Tyr His Lys Pro Ser Phe Asn Asp Leu Gly Leu Lys Glu Ser Val Leu 20 25 30	
aaa tcc gtt tat gaa gcc gcc ttc act tcc cca agc ccc att caa gaa 144 Lys Ser Val Tyr Glu Ala Gly Phe Thr Ser Pro Ser Pro Ile Gln Glu 35 40 45	
aag gcc att ccg gct gtt ttg caa gcc cga gat gtc atc gca caa gcc 192 Lys Ala Ile Pro Ala Val Leu Gln Gly Arg Asp Val Ile Ala Gln Ala 50 55 60	
caa aca gcc aca gga aaa acc gcc gct ttc gct ctg ccc att atc aac 240 Gln Thr Gly Thr Lys Thr Ala Ala Phe Ala Leu Pro Ile Ile Asn 65 70 75 80	
aac ctt aaa aac aac cac acc ata gaa gcc cta gtg atc acg ccc acc 288 Asn Leu Lys Asn Asn His Thr Ile Glu Ala Leu Val Ile Thr Pro Thr 85 90 95	
aga gaa tta gcc atg caa att agc gat gag att ttc aaa ttg gcc aar 336 Arg Glu Leu Ala Met Gln Ile Ser Asp Glu Ile Phe Lys Leu Gly Lys 100 105 110	
cac acc agg act aaa acc gtg tgc gtg tat gga gcc cag agc gtt aaa 384 His Thr Arg Thr Lys Thr Val Cys Val Tyr Gly Gly Gln Ser Val Lys 115 120 125	
aag caa tgc gaa ttc att aag aaa aat ccc caa gtg atg atc gct aca 432 Lys Gln Cys Glu Phe Ile Lys Lys Asn Pro Gln Val Met Ile Ala Thr 130 135 140	
cca gga agg ctg ctc gat cac tta aaa aac gaa cgc atc cat aaa ttt 480 Pro Gly Arg Leu Leu Asp His Leu Lys Asn Glu Arg Ile His Lys Phe 145 150 155 160	
gtg cct aaa gtg gtc gtt tta gat gaa agc gat gaa atg ctg gat atg 528 Val Pro Lys Val Val Leu Leu Asp Glu Ser Asp Glu Met Leu Asp Met 165 170 175	
ggg ttt tta gac gat att gaa gag att ttt gac tac ctc cct agc gaa 576 Gly Phe Leu Asp Asp Ile Glu Glu Ile Phe Asp Tyr Leu Pro Ser Glu 180 185 190	
gcg cag att ttg ctt ttt tca gcc acg atg cca gag ccg att aaa aga 624 Ala Gln Ile Leu Leu Phe Ser Ala Thr Met Pro Glu Pro Ile Lys Arg 195 200 205	
cta gcg gat aag att tta gaa aac cct att aaa atc cat atc gct cct 672 Leu Ala Asp Lys Ile Leu Glu Asn Pro Ile Lys Ile His Ile Ala Pro 210 215 220	
tct aat atc act aac acc gac atc acc caa cgc ttt tat gtg atc aat 720 Ser Asn Ile Thr Asn Thr Asp Ile Thr Gln Arg Phe Tyr Val Ile Asn 225 230 235 240	
gag cat gag agg gcc gaa gcg atc atg cgc ctt tta gac acc caa gca 768 Glu His Glu Arg Ala Glu Ala Ile Met Arg Leu Leu Asp Thr Gln Ala 245 250 255	
ccc aaa aag agc att gtt ttc acg cgc act aaa aaa gaa gcc gat gaa 816 Pro Lys Lys Ser Ile Val Phe Thr Arg Thr Lys Lys Glu Ala Asp Glu 260 265 270	

FIG. 7a

ttg cac caa ttc ctt gct tct aaa aat tac aaa agc acc gcc ttg cat	864
Leu His Gln Phe Leu Ala Ser Lys Asn Tyr Lys Ser Thr Ala Leu His	
275 280 285	
ggg gat atg gat caa agg gat cgg cgc tct tct atc atg gcg ttt aaa	912
Gly Asp Met Asp Gln Arg Asp Arg Arg Ser Ser Ile Met Ala Phe Lys	
290 295 300	
aaa aat gac gct gat gtg ttg gtg gct aca gat gtg gcg agt cgt ggg	960
Lys Asn Asp Ala Asp Val Leu Val Ala Thr Asp Val Ala Ser Arg Gly	
305 310 315 320	
cta gat att agc ggt gta agc cat gtg ttt aat tac cac ttg ccc cta	1008
Leu Asp Ile Ser Gly Val Ser His Val Phe Asn Tyr His Leu Pro Leu	
325 330 335	
aac act gag agc tat atc cat cgc atc ggg aga acc ggg cga gcg ggc	1056
Asn Thr Glu Ser Tyr Ile His Arg Ile Gly Arg Thr Gly Arg Ala Gly	
340 345 350	
aaa aaa ggc atg gcg atc act tta gta acc cct tta gaa tac aaa gag	1104
Lys Lys Gly Met Ala Ile Thr Leu Val Thr Pro Leu Glu Tyr Lys Glu	
355 360 365	
ctt tta cgc atg caa aaa gaa att gat tca gag att gaa ctt ttt gaa	1152
Leu Leu Arg Met Gln Lys Glu Ile Asp Ser Glu Ile Glu Leu Phe Glu	
370 375 380	
atc ccc acc att aac gaa aat cag atc atc aaa acc ttg cat gac gct	1200
Ile Pro Thr Ile Asn Glu Asn Gln Ile Ile Lys Thr Leu His Asp Ala	
385 390 395 400	
aaa gtg tct gaa ggg atc atc agc ctt tat gaa cag ctt acc gaa att	1248
Lys Val Ser Glu Gly Ile Ile Ser Leu Tyr Glu Gln Leu Thr Glu Ile	
405 410 415	
ttt gag ccg tct caa ttg gtt tta aaa ctt ttg agt ttg cag ttt gaa	1296
Phe Glu Pro Ser Gln Leu Val Leu Lys Leu Leu Ser Leu Gln Phe Glu	
420 425 430	
acc agc aaa att ggc tta aac cag caa gaa att gac gcg att caa aac	1344
Thr Ser Lys Ile Gly Leu Asn Gln Gln Glu Ile Asp Ala Ile Gln Asn	
435 440 445	
cct aaa gaa aaa acg cca aaa ccc tct aac aaa aaa acg ccc caa cat	1392
Pro Lys Glu Lys Thr Pro Lys Pro Ser Asn Lys Lys Thr Pro Gln His	
450 455 460	
gag cga gcg cgt tct ttc aaa aag ggt cag cac aga gac aga cac cct	1440
Glu Arg Ala Arg Ser Phe Lys Lys Gly Gln His Arg Asp Arg His Pro	
465 470 475 480	
aaa aca aac cat tat tct aaa aaa ccc aaa cgc cgt	1476
Lys Thr Asn His Tyr Ser Lys Lys Pro Lys Arg Arg	
485 490	

FIG. 7b



atg gca tac aaa tat gat aga gac ttg gaa ttt tta aag caa ttg gaa	48
Met Ala Tyr Lys Tyr Asp Arg Asp Leu Glu Phe Leu Lys Gln Leu Glu	
1 5 10 15	
tct agt gat tta ttg gat ttg ttt gag gtg ctt gtt ttt ggt aaa gac	96
Ser Ser Asp Leu Leu Asp Leu Phe Glu Val Leu Val Phe Gly Lys Asp	
20 25 30	
ggc gaa aaa aga cac aat gaa aaa ctg acc agc tcc ata gaa tac aaa	144
Gly Glu Lys Arg His Asn Glu Lys Leu Thr Ser Ser Ile Glu Tyr Lys	
35 40 45	
agg cat ggc gat gat tac gct aaa tac gca gaa aga atc gct gaa gag	192
Arg His Gly Asp Asp Tyr Ala Lys Tyr Ala Glu Arg Ile Ala Glu Glu	
50 55 60	
ttg caa tac tat ggg agc aat agt ttt gcg agt ttc att aaa ggc gaa	240
Leu Gln Tyr Tyr Gly Ser Asn Ser Phe Ala Ser Phe Ile Lys Gly Glu	
65 70 75 80	
gga gtc tta tac aaa gag att tta tgc gat gtg tgc gat aaa tta aag	288
Gly Val Leu Tyr Tyr Gly Ser Asn Ser Phe Ala Ser Phe Ile Lys Leu Lys	
85 90 95	
gtc aat tac aac aag aaa act gaa acg act tta att gaa caa aac atg	336
Val Asn Tyr Asn Lys Lys Thr Glu Thr Thr Leu Ile Glu Gln Asn Met	
100 105 110	
ctt tct aaa atc tta gaa aga agt ttg gaa gaa atg gat gat gaa gaa	384
Leu Ser Lys Ile Leu Glu Arg Ser Leu Glu Glu Met Asp Glu Glu	
115 120 125	
gtg aaa gaa atg tgc gat gaa tta tcc ata aaa aac acg gac aat tta	432
Val Lys Glu Met Cys Asp Glu Leu Ser Ile Lys Asn Thr Asp Asn Leu	
130 135 140	
aac aga caa gcc tta agc gcg gcg act tta acg ctg ttt aaa atg ggg	480
Asn Arg Gln Ala Leu Ser Ala Ala Thr Leu Thr Leu Phe Lys Met Gly	
145 150 155 160	
ggg ttt aaa tct tat caa tta gct gtc att gtt gcg aat gcg gtc gca	528
Gly Phe Lys Ser Tyr Tyr Glu Leu Ala Val Ile Val Ala Asn Ala Val Ala	
165 170 175	
aaa acc att cta ggg cgt ggt tta tcg gcg ggc aat cag gtg ctt	576
Lys Thr Ile Leu Glu Arg Gly Leu Ser Leu Ala Gly Asn Gln Val Leu	
180 185 190	
aca aga act ctg agc ttt tta aca ggt cct gtt ggc tgg atc att aca	624
Thr Arg Thr Leu Ser Phe Leu Thr Gly Pro Val Gly Trp Ile Ile Thr	
195 200 205	
ggc gta tgg aca gcg att gat att gca ggg ccg gct tat agg gta acc	672
Gly Val Trp Thr Ala Ile Asp Ile Ala Gly Pro Ala Tyr Arg Val Thr	
210 215 220	
ata cgg gca tgc att gtg gtt gcc act tta cgc cta aaa aca cag caa	720
Ile Pro Ala Cys Ile Val Val Ala Thr Leu Arg Leu Lys Thr Gln Gln	
225 230 235 240	
gcc aat gga gat aag aag tcg ttg caa ata gaa tcc att	759
Ala Asn Gly Asp Lys Lys Ser Leu Gln Ile Glu Ser Ile	
245 250	

FIG. 8

Protection Against Gastric *H. pylori* Colonization in Mice Conferred  
by Subcutaneous Immunization with Recombinant Hp30

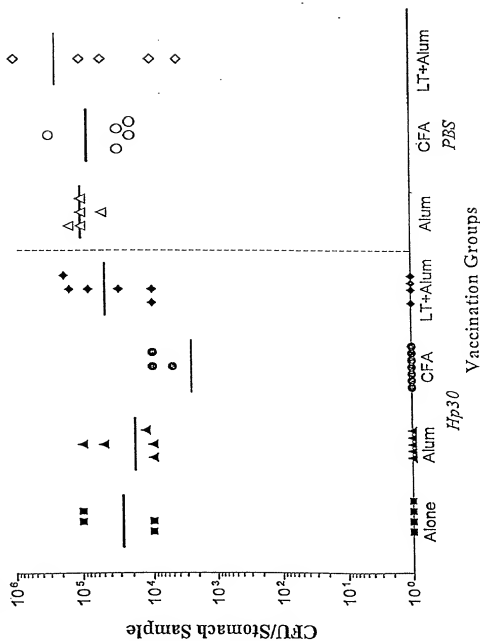


FIG. 9

Protection Against Gastric *H. pylori* Colonization in Mice Conferred  
by Oral Immunization with *Helicobacter* Lysate or Subunits Vaccine

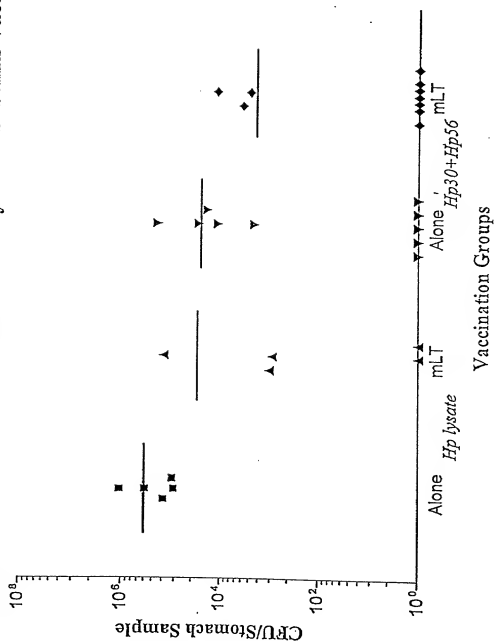


FIG. 10